

(12) **UK Patent Application** (19) **GB** (11) **2 106 430 A**

(21) Application No **8224535**
(22) Date of filing **26 Aug 1982**
(30) Priority data
(31) **8126316**
(32) **28 Aug 1981**
(33) **United Kingdom (GB)**
(43) Application published
13 Apr 1983

(51) **INT CL³**
B24C 1/00
(52) Domestic classification
B3D 8A1 8A2 8A3
U1S 1466 1713 2403 B3D

(56) Documents cited
GB 1525650
GB 1066904
GB 1041620
GB 0914337

(58) Field of search
B3D

(71) Applicants
British Steel Corporation
(Great Britain),
9 Albert Embankment,
London SE1 7SN

(72) Inventor
Peter Geoffrey Stone

(74) Agent
A. V. Fry,
British Steel Corporation,
Patent Section, NLA
Tower, 12 Addiscombe
Road, Croydon CR9 3JH

(54) **Stainless steel sheet or strip**

(57) A stainless steel sheet or strip is printed with a patterned surface by means of a blast of abrasive material

directed at its surface.

The abrasive material may comprise sand, metallic grit, shot or glass beads and projected by a wheel, air, water, oil or dilute acid.

GB 2 106 430 A

SPECIFICATION

Stainless steel sheet or strip

This invention relates to stainless steel sheet or strip.

- 5 Stainless steel sheet is used in substantial quantities for architectural and building purposes, e.g. for cladding buildings and other internally or externally exposed structures and in public amenities such as bus shelters, toilets etc. and there is frequently a need for a distinctive surface finish which after ageing or being defaced may be readily refurbished.

It is an object of this invention to meet this need.

- 15 The present invention provides in one aspect stainless steel sheet or strip having a sand, grit, glass or shot blasted surface.

- 20 In another aspect, the invention provides a method of producing a sheet or strip of stainless steel which includes the step of directing a blast of glass shot sand, grit or ferrous shot onto one or both surfaces of the sheet or strip to produce a pattern thereon.

- 25 Accordingly, a durable, aesthetically pleasing patterned or plain surface may be produced in this fashion but one of the principal advantages is that the surface is vandal resistant in the sense that any graffiti or superficial marking may readily be removed locally by subjecting the defaced surface to the original blast treatment in situ by using portable equipment, thus reproducing the original finish.

Typically, the blast medium may comprise

- 35 (a) Expendable slag abrasive (alternative to sand). Particle sizes may for example be in the range 0.2 mm to 2.0 mm in diameter.
(b) Metallic grit with sizes typically in the range G07 to G12 (BS 2451:1963).
(c) Steel or iron shot with sizes typically in the range S070 to S120 (BS 2451:1963).
40 (d) Glass beads or shot with sizes up to 500 microns and typically in the range 50 to 200 microns.

- 45 In general, the finer abrasives are preferred since they produce minimum distortion of the surface — shot, for example, imparts much more energy into the surface and could under some conditions produce problems in distorting the surface.

- 50 As mentioned the blasting may be effected to produce a pattern and this may conveniently be done by using a multi-headed gun, which, whilst traversing the surface, may itself either be stationary or rotating. The various nozzles may project particles of different sizes.

After blasting, e.g. with an air carrier, the surfaces will require washing with water to

remove dust. Scrubbing or washing with dilute nitric acid may also be considered to clean and passivate the surfaces. In this regard, dilute acid cleaning may be particularly necessary after blasting with steel or iron shot or grit to remove any ferrous particles lodged in the surface and prevent rust staining.

- 60 To avoid rust staining and the need for washing, glass beads or shot may be used as the blast medium. Alternatively, the particles may be blasted in a fluid carrier such as water or oil mixtures or even in the dilute acid itself. In yet another alternative, the blasting may be effected pneumatically or mechanically, in the latter case the particles being projected from a spinning disc or wheel.

- 75 The original surface treated may be that produced by standard production techniques; as an example, a surface equivalent to say a 2D finish (BS 1449), or better, will be satisfactory although this may be relaxed for coarser grit or heavy shot. Either one, or both sides of the sheet or strip may be blasted of course.

CLAIMS

1. Stainless steel sheet or strip having a sand, grit, glass or shot blasted surface.
2. Method of producing a sheet or strip of stainless steel which includes the step of directing a blast of glass shot sand, grit or ferrous shot onto one or both surfaces of the sheet or strip to produce a pattern thereon.
3. A method as claimed in Claim 2 wherein the blast medium comprises expandable slag abrasive having a particle size not greater than 2.0 mm in diameter.
4. A method as claimed in Claim 2 wherein the blast medium comprises metallic grit of particle size in the range G07 to G12.
5. A method as claimed in Claim 2 wherein the blast medium comprises ferrous shot having a size typically in the range S070 to S120.
6. A method as claimed in Claim 2 wherein the blast medium comprises glass beads.
7. A method as claimed in any one of Claims 2 to 6 wherein the blast medium is projected onto a surface of a sheet or strip in a fluid carrier comprising air or water or oil or dilute nitric acid.
8. A method as claimed in any one of Claims 2 to 6 wherein the blast medium is projected onto a surface of a strip or sheet mechanically by means of a spinning disc or wheel.
9. A method of producing a sheet or strip of stainless steel with a patterned surface substantially as herein described.
10. Stainless steel sheet or strip whose surface finish is produced by directing a blast of abrasive material at it.